Construction of E-Commerce Entrepreneurship Curriculum System for College Students: An Information Entrepreneurship Perspective

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Abstract

With the rapid development of Electronic Commerce, the demand for the quantity and professional knowledge of the professional talents in electronic commerce is continuously improving. The development of network market provides an opportunity for college students to start their own business, and the ultimate goal of e-commerce business entrepreneurship is to cultivate students' ability to use e-commerce to start a business. In this paper, the authors analyze the construction of e-commerce entrepreneurship curriculum system for college students based on information technology perspective. In the curriculum system construction, the course is divided into three levels; the first level is mainly about the basic knowledge of e-business, second level is mainly about business development course, and the third levels of curriculum mainly about laws and regulations. Establish and perfect the innovation and entrepreneurship curriculum system, and cultivate the students' awareness of online entrepreneurship is a development trend in the future.

Keywords: Electronic commerce, Network entrepreneurship, Curriculum system, College Student

1. Introduction

With the development of Electronic Commerce (EC) in China's fast development and the widespread application, to the electronic commerce specialized personnel quantity and professional knowledge requirements in continuous improvement, e-commerce professional also in a short span of six years to the rapid development of the more than 400 undergraduate college teams, and every year tens of thousands of students scale cross emerging professional [1]. As electronic commerce professional and management science, economics, information technology, law is closely related to the cross type and composite type professional and its professional features to reflect the integration of the disciplines of complex knowledge system advantage, but also reflects the features of professional knowledge which oneself is in sole possession [2-3]. These advantages and characteristics should be adapted to the development of talent demand and professional knowledge renewal in the process of national social and economic development. Electronic commerce talented person should with the spirit of innovation and entrepreneurship, in the compound applied talents and information business and e-commerce curriculum integration, to carry out the process to learn the professional knowledge and vocational skills training and entrepreneurship training. It is an important part of the integration of

both information technology and e-commerce curriculum integration and informationization of entrepreneurship education is the main way [4].

Entrepreneurship and entrepreneurship education of college students has been a subject to which more attention has been paid in higher education, but due to various conditions, entrepreneurial success rate is not high, in recent years, the rise of electronic commerce and the vigorous development of the network market, for business students provides a contract, e-commerce business threshold low, eliminates the limitation of time and space [5-6]. The ultimate goal of e-commerce business is to cultivate students' ability to use e-commerce to start a business. In order to achieve this goal, the institute needs to train a number of outstanding entrepreneurial guidance teachers, to build a set of applicable curriculum system for the needs of students to provide professional education services. Entrepreneurship education is the key to the training of teachers, with good teaching resources, to cultivate entrepreneurial students to have the basic guarantee. The curriculum system of electronic commerce business to training to carry out the network of entrepreneurial talents as the goal, to the Internet as platform, to combat exercise as a means of normalization, all kinds of curriculum on the basis of the creation of the sum. Among them, the Internet business is to create and organize business activities through the Internet, and to provide services and products [7-8]. E-commerce entrepreneurship curriculum system with its clear goal system, curriculum system and evaluation system marks the entrepreneurial education has entered a new stage.

## 2. The Construction of E-Commerce Entrepreneurship Curriculum System

2.1. Electronic Commerce Development

Electronic commerce was born from 1990 to 2015, the era of universal electricity suppliers, which shows that e-commerce as a new industry has grown from a period of rapid development to a stable period of maturity. Throughout the time of nearly 30 years in China's e-commerce development process can be found, from the beginning of the industry to the rapid development of this period of time, the electronic commerce roughly every 3 years will appear at specific stages of the fashion trend, which can be seen as a manifestation of the rapid development of the industry. Since 2000, steady progress of electronic commerce and entered the mature period of industry development, the amount and the rapid development of it and e-commerce related logistics industry development and computer technology supporting industries are closely related. In the construction of entrepreneurship curriculum system, it should pay attention to the analysis of the final goal setting, the basic principles should be conducive to the realization of teaching goals. Goals can be divided into three aspects, the first is the combination of theory and practice of, entrepreneurship courses both the universality of general higher education, and has its own personality, entrepreneurial skills training is inseparable from the support of curriculum practice; secondly is to pay attention to the coordination of the curriculum system and regional economic development and entrepreneurship education should be based on the model of regional economic development, so that is conducive to teaching practice and social service, students also make full use of the basic premise of educational resources in the society; thirdly, interactive training curriculum system and teaching, course construction is basically equipped with and construction of teachers, in the process of constructing curriculum to give full consideration to the development of teachers and equipped with an ability.
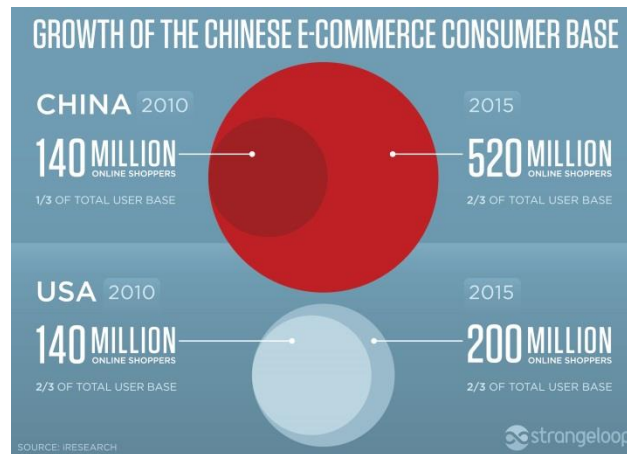
Figure 1. E-Commerce Development Trend

Each school of electronic business curriculum system is not the same, but mainly classified in the following models. One is the three major systems of the two most of the model. That is: in the overall set of three major systems (professional foundation, professional direction, professional development), which is the professional direction of business + technology two. This model is the core of the electronic commerce professional courses are divided into "business", "technology"". Two is based on the working process of the curriculum system. For example, the electronic commerce workflow is divided into four parts: business information collection and processing, network negotiation and transaction, payment and settlement, customer management and entrepreneurship. This set of features is: in the overall thinking around the "process", but for each module and the specific curriculum setting is still the subject of, so curriculum schedule table eventually will continue to show some more independent course. And the electronic commerce course system which is connected with the national vocational qualification is also set up in the work flow of Simulated company ". Its feature is the course of the opening of the order and course content around the construction process of e-commerce Simulated company to expand, and into the content of e-commerce division of the national vocational qualification examination. Three is the training curriculum system of school enterprise cooperation. The training teaching is separated from the theoretical teaching, and the four modules are formed, which are professional quality, professional knowledge, professional ability and career development. "Professional knowledge" theory, "professional ability" specializing in training. The construction of the training teaching system depends on the construction of the training base inside and outside the school. Based on the engineering environment, blend, seems to be on line. Four is the combination of entrepreneurship education e-commerce courses. E-commerce business integrated training projects throughout the whole process of learning. The theory course system includes three parts of the public basic courses, vocational basic courses and vocational skills courses, the practical course system includes basic training, comprehensive training and graduation practice link.
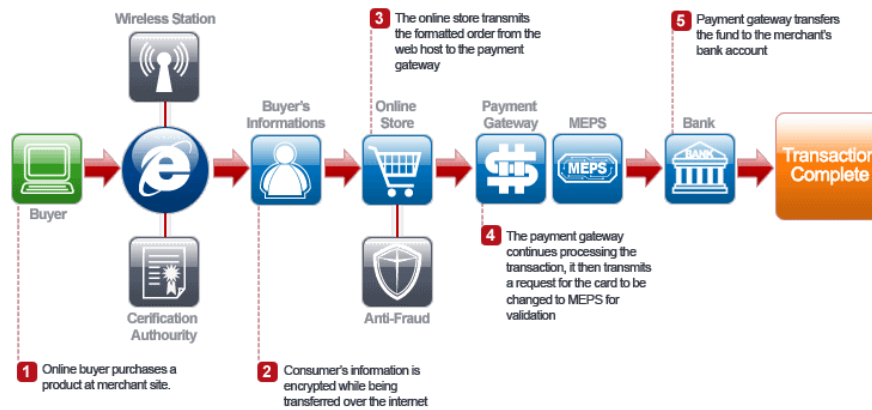
Figure 2. E-commerce Shopping Process

2.2. System Construction

In the construction of the curriculum system, the curriculum can be divided into three levels. The first level to guide students as the main goal, through the students' motivation to stimulate their enthusiasm for entrepreneurship. In this aspect of the course arrangement can be achieved in Entrepreneurship Education in school achievement, outstanding alumni stories and other content will be added to the system, fresh and practical, and has a good effect to the role of education, and entrepreneurial culture and heritage. In addition, the development trend of e-commerce, the basic network platform for the introduction of operational norms and skills to the students. The second level to business development courses mainly in this level of curriculum, to focus on the students' ability and business development and training, to guide them to upgrade their business and market development. E-commerce, for example, after the students learn the basic retail e-commerce skills, and guide them to the Internet wholesale, international e-commerce and traditional business entities to try. The third level courses are designed to help students never standardized sales network to the operation of the company and change the role around the operation of the company, supply chain management, external environment, laws and regulations, foreign trade platform to construct the curriculum system.

In the construction of curriculum system should focus on the overall situation, overall consideration, it is necessary to pay attention to the practical skills of teaching and guidance, but also pay attention to the quality of training; it is necessary to focus on electronic commerce business guidance, but also pay attention to expected for the future development and expand; it is necessary to pay attention to the cultivation of its ability, but also pay attention to the understanding of the external environment. With the development of economy and society, the construction of the curriculum system should also pay attention to the times, in the course of construction, to set up a "automatic update" mechanism.

Figure 3. Electronic Commerce Channel

3. Research Design

3.1. Data Mining

In this paper, we adopt data mining algorithm to analyze the data. Data mining is a combination of machine learning, database and statistics three. The data mining to first determine the mission or purpose of the excavation, determining the mining task, it is necessary to decide to use what kind of mining algorithm. After selecting the algorithm can implement data mining operation, the acquisition of useful patterns. The support vector machine (SVM) is realized by mapping the input vector into a high dimensional feature space by some prior nonlinear mapping (kernel function), and the optimal classification hyper plane is constructed in this space. We use support vector machine (SVM) data set classification process is, first of all, through pre selected some nonlinear mapping the input space mapping to high-dimensional feature space so that in high dimensional feature space may be on the training data to achieve super plane segmentation, to avoid in the original input space of nonlinear surface segmentation is computed. SVM data set classification function has such properties: it is a group to support vector as a linear combination of the parameters of the nonlinear function, so classification function expressions only and support vector quantity about, independent of the dimension of the space. This method is especially effective when dealing with high dimensional input space.

First, the linear separable problem is analyzed. For linearly separable training sets:

$$T = \{(x_1, y_1), (x_2, y_2), K, (x_n, y_n)\} \tag{1}$$

Hypothesis existence discriminant function:

$$f(x) = \text{sgn}((\omega \cdot x) + b) \tag{2}$$

In order to maximize the classification of the two types of samples, it is needed to maximize the distance, that is, structural optimization problem:

$$\min \quad \frac{1}{2}\|\omega\|^2 \tag{3}$$

$$s.t. \quad y_i(\omega \cdot x + b) - 1 \geq 0$$

By introducing Lagrange multipliers,

$$\min \quad \frac{1}{2}\sum_{i=1}^{n}\sum_{j=1}^{n} y_i y_j \alpha_i \alpha_j \left(x_i \cdot x_j\right) + \sum_{i=1}^{n} \alpha_i \tag{4}$$
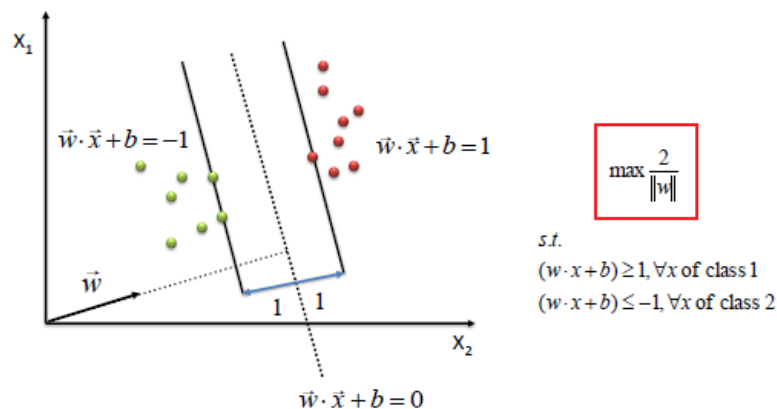
$$s.t. \quad \sum_{i=1}^{n} y_i \alpha_i = 0$$

The solution can be obtained by solving the equation:

$$\omega = \sum_{i=1}^{n} \alpha_i y_i x_i \tag{5}$$

$$b = y_i - \sum_{i=1}^{n} y_i \alpha_i \left(x_i \cdot x_j\right) \tag{6}$$

Then we get the linear discriminant function:

$$f(x) = \text{sgn}\left(\sum_{i=1}^{n} \alpha_i y_i \left(x_i \cdot x_j\right) + b\right) \tag{7}$$

Figure 4. Optimal Separating Hyper Plane

3.2. Questionnaire Investigation

S As in recent years the popularity of the Internet, more and more college students began to engage in online business activities, in Jilin universities in the BBS, in Taobao, pat, professional C2C website, students livelily operates your own small business. In order to empirically study the online e-commerce business activities of college students, we have carried out the investigation of the current situation. In the form of questionnaire, the research on the knowledge, entrepreneurial intention, entrepreneurial orientation and the main difficulties of Siping college students in electronic commerce. On the basis of full investigation, the analysis of the characteristics, status and advantages and disadvantages of college students to carry out e-commerce business, found that the actual difficulties and problems of students on the Internet business. An interview with the students who have had the entrepreneurial practice, to understand their successful experience or failure lessons, to sum up the problems of college students in their own business, the theory and practice of these issues. The main part of the questionnaire mainly involves the following: college students of online business ideas and

entrepreneurial intention; College of electronic commerce the recognition and understanding of the degree; college students think is most important to e-commerce business knowledge, and the ability in self employment the main difficult and needs to solve problems; college students hope schools and government to give what support. A total of 600 questionnaires, the recovery of 567 valid questionnaires, the questionnaire response rate was 94.5.
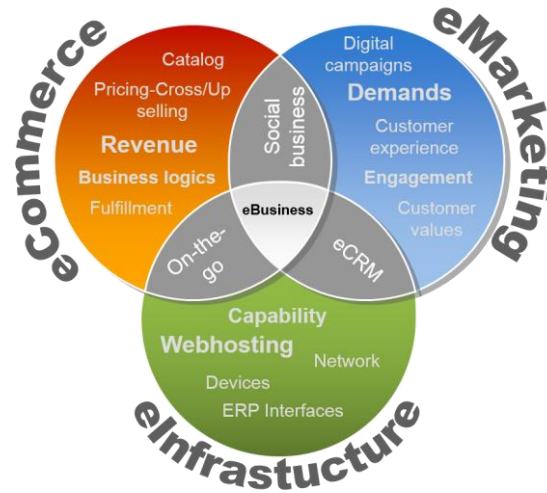

Figure 5. E-Business Entrepreneurs

4. Empirical Analysis

Through data mining, we investigate the situation into the analysis. The results show that the attention of college students to e-commerce is relatively high, nearly half of the students directly or indirectly involved in online trading behavior, most of the students are in a state of electronic commerce business. In the survey of 567 people, did not visit any of the trading sites accounted for 133 of the students, the total number of 23.5%, 76.5% of people said they had visited Taobao, eBay or campus BBS trading network. In these 3/4 concerns, the number of directly or indirectly involved in online transactions accounted for almost half of all surveyed students. 22% of the students said that there had been shopping online, 19.8% of the students have friends, relatives or students to operate e-commerce. Most surprising is that in the survey of 600 students, we directly find the 17 students engaged in C2C e-commerce, accounting for the total number of 3%.
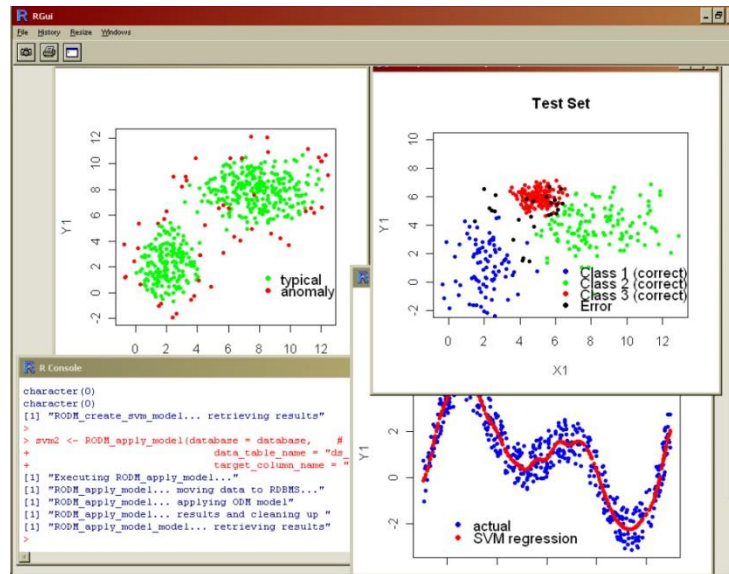
Figure 6. Data Mining Analysis

4.1. College Students' Electronic Commerce Entrepreneurial Intention

College students engaged in self employment, is the process of non labor state to enter the labor market, this process, as the entrepreneurial subject of College Students' entrepreneurial willingness is worth our attention.

Table 1. College Students' Entrepreneurial Intention of Electronic Commerce

Content	Low grade	Percentage	High grade	Percentage	Total	Percentage
Look at the situation and then set	144	43.6	99	41.8	243	42.9
Currently temporarily uncertain	103	31.2	83	35.0	186	32.8
Desire to have business	56	17.0	27	11.4	83	14.6
No plan at all	27	8.2	28	11.8	55	9.7
Total	330	100.0	237	100.0	567	100.0

Among them, made it clear that "did not intend to" is only 9.7%, and more than 90% of the students in a wait state, indicating that, in recent years of entrepreneurial education and good business opportunities, many college students are the germination of the entrepreneurial ideal, but really to carry out entrepreneurial activities but also by the constraints of the external environment and internal conditions. In Table 1, choose to "see" and "uncertain" accounted for three quarters, see students for entrepreneurship is still very cautious, 32.8% of the people are not sure, 42.9% of the human condition allows will try. Obviously, their choice is rational, they recognize the lack of their own conditions to bring the entrepreneurial risk. When further asked "to you, is currently

involved in e-commerce business the main difficulties" when, 69.8% think "professional knowledge is insufficient", 62.9% of the people think "lack of entrepreneurial experience, 42.6% of people think is subject to" capital site restrictions ". College students for their own conditions more clear understanding, make it more rational choice of the future development of the road.

In the investigation of the value orientation of entrepreneurship, college students' views on entrepreneurial choice followed by "personal development and self-improvement" is 55.9%, "experience" was 28.7%, "for 9.9% of the founding his own cause", "money" for 5.5%, Table 2). Thus, most of the students did not make money as the primary purpose of entrepreneurship, but more concerned about the practice of entrepreneurship through the acquisition of experience and achieve self-development.

Table 2. The Value Orientation of College Students' Entrepreneurship

Content	The number	Percentage
Accumulate experience	163	28.7
Start your own business	56	9.9
Development and self promotion	317	55.9
Make money	31	5.5
Total	567	100.0

4.2. Analysis of College Students' Entrepreneurial Qualities

Table 3 is the statistical results of the most important knowledge and ability of the e-commerce business. SPSS in check on the topic of the statistics, may give two percentage data, PCT of responses and PCT of cases. Among them, the PCT of responses is accounted for the proportion of the total number of check the number, the PCT of cases is accounted for the proportion of the total number of check the number. In Table 3, for example, 567 people participate in this multiple-choice total produce 2476 times to select, select "marketing management knowledge" passengers 399. Check number accounted for (PCT ratio of the total number of responses for: 399/2476=16.1%. Check the number accounted for proportion (PCT of the total number of cases): 399/567=70.4%. Through the data we found that students agree that "computer network knowledge" and "marketing management knowledge" are the most important to engage in e-commerce business, followed by "personal interest" and "social experience". The results show that the improvement of College Students' sense of action, strengthen the professional knowledge and professional skills training should be the focus of our entrepreneurship education.

Table 3. The Most Needed Knowledge and Ability of E-Commerce Business

Content	Number	Pct of Responses	Pct of Cases
Marketing management knowledge	387	16.1	70.4
Computer network knowledge	416	17.1	74.6
Interest and entrepreneurial desire	359	14.9	64.9
Selling skills	246	10.1	44.3
Practical experience	261	10.4	45.3
Regulatory policy	220	9.6	41.8

Procedures and skills	236	9.7	42.5
Communicative competence	305	12.1	52.9

Table 4. Schools to Carry Out E-Commerce Business Education Content

Content	Number	Pct of Responses	Pct of Cases
Open a business course	309	15.9	54.5
Organizational entrepreneurship lecture	252	13.0	44.4
Business plan competition	186	9.6	32.8
Business Services Center	221	11.4	39.0
Personalized guidance	159	8.2	28.1
Entrepreneurial practice	306	15.8	54.0

Table 4, is the investigation of the macro environment of entrepreneurship education and entrepreneurial, no significant difference between the proportion of the options in the tables, indicating that students on the macroscopic and microcosmic environment of the potential demand for entrepreneurship is very huge of, most of the students want to develop their entrepreneurial abilities, our quality education is still far from students are unable to huge demand. To ensure the effectiveness of entrepreneurship education in Colleges and universities, we must first strengthen propaganda to entrepreneurship education, let the students know what is Entrepreneurship and entrepreneurship education. To study the relationship between the necessity of entrepreneurship education and its own development. Government and society have the responsibility for college students to build a pragmatic, system of entrepreneurial practice platform, and then create the business is conducive to college students' autonomy and business conditions and space.

5. Conclusions

In recent years, with the aid of in the Internet business activities around the world has made an unprecedented rapid development, students' use of the network marketing business, equivalent to the risk from small, relatively low cost of the project to start, so you can to accumulate experience, even if the failure, also can rally. Network marketing for business students to provide a low cost transition, network virtual and network marketing prospects, reducing the because of lack of experience, lack of relationship and the immature state of mind and the venture. Through the practice of e-commerce business summed up the experience, but also for other types of entrepreneurial activities to provide reference. In the teaching of computer basic courses in Colleges and universities, it is a developing trend of the future to cultivate students' consciousness on the Internet. The teaching content of computer basic course needs to be optimized and integrated, which can not adapt to the old knowledge of social development, and add some new contents which are beneficial to the cultivation of entrepreneurial consciousness. For example, in the "University Computer Foundation" to add a chapter "IT entrepreneurial road", the introduction of the network business case, the need for technology, the potential business opportunities, etc.. In the teaching of programming, not only teach students programming, but also can explain the technical problems such as web design, and guide students how to

do a network of entrepreneurs. Through such a number of ways, unconsciously to stimulate students' interest in entrepreneurship, spontaneous generation from "want me to start" to "I want to start a business" transformation.

E-commerce professional innovation and entrepreneurship education curriculum system for other professionals have reference. At present, the innovation and entrepreneurship education in our country is still in its initial stage. It is urgent to establish a multi-level and multi type curriculum system, including the innovation and entrepreneurship awareness, knowledge, ability, practice and so on. Therefore, the electronic commerce as a pilot, the innovation and entrepreneurship education into the formal education curriculum system, and establish a sound system of innovation and entrepreneurship courses. It is necessary to learn from other professional innovation and Entrepreneurship Education.

Acknowledgements

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